

THE GENERA *EOOPHYLA* SWINHOE AND *NYMPHICULA* SNELLEN (LEPIDOPTERA: CRAMBIDAE: ACENTROPINAE) IN FIJI, WITH DESCRIPTIONS OF FOUR NEW SPECIES

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Abstract

The related moth genera *Eoophyla* Swinhoe and *Nymphicula* Snellen from Fiji are reviewed. Seven *Eoophyla* species are fully described, including the newly described *E. albipuncta*, *E. vitiensis*, *E. lutea* and *E. montana*, plus three other species newly transferred to *Eoophyla* from three different genera. Previously described *Nymphicula* species from Fiji are included here for completeness and comparison, since they are superficially very similar.

Introduction

Species belonging to a number of genera of the subfamily Acentropinae (previously known as Nymphulinae) show considerable superficial similarity in terms of wing markings. These are small, attractive moths (Fig. 1), with markings similar to those shown in Figs 2-13, the dark marginal spots on the hind wing being particularly characteristic. A collection of moths from Fiji from the years 1991-1998, with a few from later years, included 138 specimens of this general type. In the past, species similar to these have been assigned to a variety of genera, including *Cataclysta* Hübner, *Nymphicula* Snellen, *Eoophyla* Swinhoe, *Aulacodes* Guenée, *Oligostigma* Guenée, *Margarosticha* Lederer and *Anydraula* Meyrick. Yoshiyasu (1980) noted that *Nymphicula* had long been treated as a synonym of *Cataclysta* and that many species had been described under this genus from tropical regions. He proposed the removal of *Nymphicula* from this synonymy, with *Cataclysta* being restricted to a single Palaearctic species, *C. lemnata* (Linnaeus). Speidel and Mey (1999) catalogued the Oriental Acentropinae, moving many species to new generic combinations. They listed *Eoophyla* as the most species-rich genus among those being considered here (49 species), followed by the reinstated *Nymphicula* (22 species).

Ten species belonging to these genera were found in Fiji, including the two *Nymphicula* species (see below). Seven species were assigned to *Eoophyla*. Of these, three were previously described species that are assigned new generic combinations, while four are described as new. The tenth is a single specimen of an apparently undescribed species, which can provisionally be assigned to *Nymphicula* but cannot be fully described as the abdomen is missing.

Agassiz (2014) reviewed *Nymphicula* in Australia, New Guinea and the South Pacific, including descriptions of 23 new species and five existing species, with several new generic combinations. Two of these species, *N. cyanolitha* (Meyrick) (*Cataclysta*) and *N. australis* (Felder & Rogenhofer) (*Margarosticha*) were originally described from Fiji. A number of specimens

of each of these two species were taken during the present study. These species were fully described and illustrated by Agassiz (2014), including male and female genitalia, but illustrations of the adults are included here for the purposes of comparison and completeness, as the wing patterns are superficially similar to those of the *Eoophyla* species. Their distribution in Fiji is also noted.

Eoophyla species are known to be aquatic in their early stages, whereas *Nymphicula* species are terrestrial. Indeed, this is listed by Speidel (1984) as one of the defining features of the genus. No confirmation of these characteristics could be made from the current work, as the early stages were not studied. However, the eastern parts of Fiji have a very wet climate and water was abundant in the forest locations where trapping took place.



Fig 1. Assemblage of *Eoophyla vitiensis* sp. n. in Namosi Province, Fiji.

Materials and methods

A regular programme of light trapping was carried out during the period 1991–1998. This was used to sample the moth fauna at various lowland forest locations in eastern Viti Levu. These included (with approximate geographical coordinates) the provinces of Serua ($-18^{\circ}09'$, $178^{\circ}01'$), Namosi ($-18^{\circ}06'$, $178^{\circ}10'$) and Tailevu ($-17^{\circ}55'$, $178^{\circ}30'$) and in the general Suva area ($-18^{\circ}04'$, $178^{\circ}26'$ and $-18^{\circ}09'$, $178^{\circ}26'$). A small number of visits were also made to Cakaudrove Province in Vanua Levu ($-16^{\circ}25'$, $179^{\circ}54'$). These locations ranged in altitude from sea level to 200 m. Recording also took place in montane forest in Naitasiri Province ($-17^{\circ}43'$, $178^{\circ}01'$) at an altitude of 900 m. A battery-powered trap was employed, using a 6W actinic tube as light source. This allowed easier access to more remote locations. A small number of further visits were made up to 2013.

Systematics

The higher classification followed here is that of Regier *et al.* (2012), who confirmed the monophyly of the Acentropinae as a subfamily of the Crambidae.

Family Crambidae Subfamily Acentropinae Genus *Eoophyla* Swinhoe, 1900

Swinhoe (1900) defined this genus based on the males having a long hair-tuft contained within a fold on the mid-tibia and both sexes having the hind wing excised below the apex. Speidel (1984) confirmed these as the defining features of *Eoophyla* and they are present in the seven species placed here in this genus, although the hindwing excision is quite minimal in some species. The head, palps and antennae also agree with Speidel's wider generic description and illustration. Speidel and Mey (1999) listed their *Eoophyla* species in five groups. No attempt is made here to consider this or any further grouping for the species under discussion. However, based on the general form of the male genitalia and of the bursa copulatrix, these seven species appear to be closely related. Speidel (1984) noted that, for Palaearctic species, the bursa bore a signum consisting of two longitudinal bands of sclerotisation. In the Fijian species, this feature is reduced to a single broken band but is very consistent among the six species where the female genitalia are available. Further study will be required to establish where the Fijian species fit into any available species groupings.

The wing markings show no sexual dimorphism, although the males consistently have somewhat more pointed forewings. It was therefore felt unnecessary to illustrate adults of both sexes. The markings have much in common among the species. The ground colour of the forewings varies from pale greyish yellow through to rich reddish buff; the markings are mainly whitish, sometimes with dark edging; all species have a costal stripe extending from the base to approximately four-fifths, darker towards the base; a narrow subterminal fascia widens towards the costa; basad is a costal patch from approximately three-fifths to four-fifths, extending at least half way across the wing. The shape of this patch can be diagnostic. In the hind wing a striking feature is a series of six dark, marginal eye spots between $Sc+R_1$ and Cu_{1b} ; sometimes these are white-pupilled and the spots are surrounded by more or less black shading; in *E. chrysota* only four spots are present. The precise conformation of these spots shows some variation between species but in poorly marked or worn specimens considerable overlap occurs. For convenience, these spots are numbered 1 to 6 (from $Sc+R_1$ to Cu_{1b}) in the descriptions that follow.

In the male genitalia, the valves are much broader than in *Nymphicula*, being about twice as long as broad; the uncus is narrow and moderately long, but not as strikingly so as in *Nymphicula*; the aedeagus of most species contains a

striking cornutus, or group of cornuti. As these form a valuable identifying character, they are illustrated in detail here. In the female genitalia, little useful detail is shown in the area of the ostium and the sterigmata; as referred to above, the bursa copulatrix is remarkably uniform, each species having a signum in the form of an extended row of small patches; the neck of the ductus bursae shows varying areas of sclerotisation and/or swelling. This feature can be diagnostic. In the individual species descriptions, the diagnostic features noted are to be interpreted in the context of the Fijian species. All types and genitalia slides have been deposited with the National Museums of Scotland, Edinburgh.

***Eoophyla hexalitha* (Meyrick, 1886), comb. n.**

Cataclysta hexalitha Meyrick, 1886

(Figs 2, 3, 14, 21)

Redescription. Wingspan: male 18-20 mm, female 18-24 mm. This species occurs in two distinct colour forms, one with the ground colour a bright yellowish buff (Fig. 2) and the other a duller brownish buff (Fig. 3). Markings are similar in both forms, whitish, with some clouding of the ground colour. These forms occur in both sexes and the markings are similar in each case. Head, thorax and abdomen more or less of ground colour. Forewings with small basal fascia, followed by diffuse antemedial fascia from termen at one-fifth to just below costa at two-fifths confluent with discal patch; subtriangular dorsal patch from two-fifths to four-fifths extending half way across wing with scattered shading of ground colour; costal patch from three-fifths to four-fifths, extending about three-fifths across wing; costal two-thirds broad and parallel sided, dorsal third half the width due to excision of basal side; edged with blackish distad; again some scattered shading of ground colour; subterminal fascia angled near dorsum, then widening evenly to costa; edged distad and partially basad with blackish; a terminal row of fine black dots. Hind wings with six very small, well defined marginal black spots in a marginal band of the ground colour, with fine white pupils which may be obsolete in all except 3 and 4; diffuse larger black spot just inside marginal spot 4; terminal half of wing whitish speckled with black; diffuse whitish basal fascia and medial fascia merging with speckled area.

Male genitalia as in Fig. 14; aedeagus with a striking group of 8 cornuti. Female genitalia as in Fig. 21; ductus bursae with clearly defined constriction a little beyond ostium followed by a sclerotised, slightly swollen section; inner boundary of this sclerotised section diffuse, outer boundary sharp. Signum a longitudinal row of about 20 small chitinous spots.

Distribution. Moderately common in lowland forest. Taken in Serua, Namosi and the Suva area.



Figs 2-9. *Eoophyla* spp: (2) *E. hexalitha* (Meyrick) ♂; (3) *E. hexalitha* (Meyrick) ♀; (4) *E. albipuncta* sp. n. ♀; (5) *E. albipuncta* sp. n. ♂; (6) *E. vitiensis* sp. n. ♀; (7) *E. lutea* sp. n. ♀; (8) *E. nephelanthopa* (Meyrick) ♀; (9) *E. montana* sp. n. ♂.

Diagnosis. Type examined. The four species *E. hexalitha*, *E. vitiensis*, *E. albipuncta* and *E. lutea* have very similar wing markings, although

E. hexalitha can usually be distinguished by its larger size. The shape of the costal patch in the forewing is diagnostic, as is the larger black spot adjacent to marginal spot 4. In the male genitalia the cornuti are a very clear diagnostic feature. In the female genitalia, the distinct constriction at the base of the ductus bursae followed by the slightly swollen sclerotised section, with the diffuse apical boundary, are also diagnostic.

***Eoophyla albipuncta* sp. n.**

(Figs 4, 5, 15, 22)

Types. *Holotype* ♂, FIJI: Viti Levu, Savura Creek, -18°04'15", 178°26'50", 17.vii.91, at light, J.A. Clayton. *Allotype* ♀, same data as holotype except 30.vi.92. *Paratypes*: same data as holotype except Namosi Highlands, -18° 06' 08", 178° 10' 30", 3 ♂♂, 21.ix.92, 21.ix.92 and 28.ii.93, 2 ♀♀, 19.ii.12 and 28.ii.93; all J. Clayton.

Description. Wingspan: male 10-12 mm, female 11-14 mm. This species also occurs in two distinct colour forms, one with the ground colour buff (Fig. 4) and the other a much paler dull yellow (Fig 5). Markings whitish; in the darker form some brownish shading; in the lighter form with a silvery tinge and little shading, giving this form a generally washed out appearance. These forms occur in both sexes and the markings are similar in each case. Head, thorax and abdomen more or less of ground colour. Wings mostly as in *E. hexalitha*. Forewings with basal shade edged broadly dark distad; a tooth-shaped mark sloped distad from below costal stripe at one half, edged dark on both sides; triangular dorsal patch from one-third to four-fifths and broadly edged dark basad; a curved pale streak running from the apex of this mark to the tornus; a costal patch extending about half way across wing, of even shape, rounded dorsally; edged with blackish except near costa. Hind wings with somewhat larger terminal black spots; 3 and 4 larger still with clear white pupils, often coalescing; terminal two-fifths of wing whitish speckled with black; medial fascia clear white, from costa, narrowing to a point about half way across wing and with distinct sharp boundary to speckled area.

Male genitalia as in Fig. 15; aedeagus with a pair of large, almost identical, structured cornuti. Female genitalia as in Fig. 22; no constriction or swelling in ductus bursae; a narrow sclerotised submedial section with both boundaries diffuse.

Etymology. The name *albipuncta* (Latin adjective) refers to the clear white pupils in two of the hindwing marginal spots.

Distribution. Moderately common in lowland forest. Taken in Tailevu, Namosi and the Suva area.

Diagnosis. The shape of the forewing costal patch immediately separates *E. albipuncta* from *E. hexalitha* and the presence of the clear white medial fascia in the hind wing separates it from *E. lutea*. It is very similarly marked to *E. vitiensis*, from which it can best be separated by the sharply defined distal boundary of the hindwing medial fascia. However, especially with

worn examples, examination of the genitalia will be necessary to reliably separate the two. In the male genitalia the cornuti are a very clear diagnostic feature. In the female genitalia the form of the sclerotised section of the ductus bursae, with the lack of any swelling, is similar to *E. nephelanthopa*, but the diffuse basal boundary is diagnostic. Signum forming a row of about 20 small chitinous spots across the apical area of the bursa copulatrix.

***Eoophyla vitiensis* sp. n.**

(Figs 6, 16, 23)

Types. *Holotype* ♂, FIJI: Viti Levu, Savura Creek, -18°04'15" 178°26'50", 30.vi.92, at light, J.A. Clayton. *Allotype* ♀, same data as holotype except Namosi Highlands, -18°06'08", 178°10' 0", 30.vi.92. *Paratypes*: same data as holotype except Namosi Highlands, -18°06'08", 178°10'30", ♂, 2.iv.05, 2 ♀♀, 1.iv.08 and 2.iv.05, Suva, -18°09'05", 178°26'05", ♂, 5.v.91; all J. Clayton.

Description. See Fig. 6. Wingspan: male 12-14 mm, female 13-16 mm. Ground colour pale buff. Head and thorax paler buff; abdomen whitish buff. Forewing markings almost identical to *E. albipuncta*. Hind wings with six moderately sized black spots in a band of ground colour; spot 1 significantly smaller than others; spots 3 and 4 with small white spot just basad, followed by a diffuse black spot spanning both; terminal two-fifths of wing whitish speckled with black; large white basal fascia and a narrow medial fascia extending half way across wing from costa; band of ground colour between this and speckled area. In poorly marked or faded specimens, the arrangement of spots cannot be distinguished from that in *E. albipuncta*.

Male genitalia as in Fig. 16; valves with angular margins, the only species under consideration exhibiting this feature; aedeagus with single, moderately sclerotised, curved cornutus. Female genitalia as in Fig. 23; a constricted, heavily sclerotised section just beyond mouth of the ductus bursae, followed by a short clear band, then a sclerotised section with a well defined outer boundary and diffuse inner boundary, followed by a somewhat expanded section. Signum a longitudinal row of about 30 small chitinous spots.

Etymology. The name *vitiensis* indicates that this species is recorded from many locations across Fiji.

Distribution. By far the most numerous of the *Eoophyla* species in Fiji. Recorded from all the lowland forest locations and also from suburban Suva. As well as the large numbers taken at light, it was observed to be very numerous by day at times of emergence. On one occasion, very large numbers were observed along the Nubukavesi Creek in Namosi Province, resting on the leaves of overhanging trees (Fig. 1) and presenting a remarkable appearance, with all facing in more or less the same direction.

Diagnosis. *Eoophyla vitiensis* is marked very similarly to *E. albipuncta* [q.v.], from which it can be separated by the narrow, clear white hindwing medial fascia, with a clear band of ground colour between this and the distal

speckled area. In the male genitalia the shape of the valves is diagnostic, as is the shape of the single cornutus. In the female genitalia the conformation of the sclerotised sections in the ductus bursae is diagnostic.

***Eoophyla lutea* sp. n.**

(Figs 7, 17, 24)

Types. *Holotype* ♂, FIJI: Viti Levu, Nukurua, -17°55'25", 178°30'06", 9.iii.94, at light, J.A. Clayton. *Allotype* ♀, same data as holotype except 3.vi.95. *Paratypes*: same data as holotype except ♀, 3.vi.95, ♂, Vanua Levu, Nakula Estate, -16°25'54", 179°54'55", 10.ii.13; all J. Clayton.

Description. See Fig 7. Wingspan: male 12-13 mm, female 16 mm. Ground colour rich orange-buff. Head, thorax and abdomen more or less of ground colour. Wing markings somewhat similar to *E. vitiensis*. Forewings with small dark brown basal fascia followed by narrower whitish subbasal fascia; dorsal patch and markings in discal area heavily shaded greyish brown, giving the central area of the wings a much darker appearance; costal patch intermediate in shape between *E. vitiensis* and *E. hexalitha*. Hind wings with marginal spots and terminal speckled area similar to *E. vitiensis*; small whitish basal fascia and somewhat obscure medial fascia with much shading of ground colour; clear bands of ground colour either side of medial fascia.

Male genitalia as in Fig. 17; aedeagus with two striking structured cornuti, one tapering basad and one distad. Female genitalia as in Fig. 24; a pronounced, moderately sclerotised swelling just before midpoint with a diffuse boundary at both ends. Signum a longitudinal row of about 10 small chitinous spots.

Etymology. The name *lutea* (Latin, adjective) refers to the overall orange/buff colouration.

Distribution. Six specimens were taken in lowland forest – in Serua, Namosi, Cakaudrove and the Suva area.

Diagnosis. *Eoophyla lutea* is very similarly marked to *E. vitiensis* and *E. albipuncta* [q.v.]. The dark basal fascia in the forewing, together with the dark appearance of the medial area, is diagnostic, as is the absence of a clear whitish medial fascia in the hind wing. In fresh specimens the rich ground colour may be diagnostic but this quickly fades. In the male genitalia the cornuti are diagnostic. In the female genitalia the conformation of the swollen section and its position on the ductus bursae are diagnostic.

***Eoophyla nephelanthopa* (Meyrick, 1934), comb. n.**

Aulacodes nephelanthopa Meyrick, 1934

(Figs 8, 18, 25)

Redescription. See Fig. 8. Wingspan: male 13-17 mm, female 15-20 mm. Ground colour orange-buff in distal half of both wings, shading to dull

brownish towards base and costa. Markings whitish, with some dull brown shading. Head, thorax and abdomen dull brownish. Forewings with clear white subquadrate discal mark; large subquadrate dorsal patch from two-fifths to four-fifths, extending half way across wing; costal patch from three-fifths to four-fifths, broad and rounded towards dorsum and extending three-fifths across wing, with considerable brownish shading and confluent with corner of dorsal patch; subterminal fascia widening from dorsum to around one half, then continuing to near costa; some brownish shading in dorsal half; more or less edged distad with brown; a terminal row of dark brownish dots. Hind wings with six moderate marginal black spots, with clear white pupils; spots 3 and 4 with additional black shading basad, causing the two to coalesce; terminal two-thirds of wing whitish, finely speckled with brown; whitish medial fascia from costa extending to two-thirds across wing, angled at dorsal end leaving a clear 'V' shaped band of orange-buff ground colour; diffuse whitish basal fascia.

Male genitalia as in Fig. 18; aedeagus with a pair of long narrow, slightly curved cornuti, only moderately sclerotised. Female genitalia as in Fig. 25; very similar to *E. albipuncta* but with basal boundary of sclerotised section sharply defined. Signum a longitudinal row of about 20 small chitinous spots.

Distribution. Five specimens were taken in lowland forest – in Tailevu, Namosi, Serua and the Suva area. One specimen was taken in montane forest in Naitasiri.

Diagnosis. Type examined. The wing markings of the two species *E. nephelanthopa* and *E. montana* are somewhat distinct from the other *Eoophyla* species but superficially similar to each other. Although *E. nephelanthopa* is normally darker and duller overall, in worn specimens this may not be conclusive. The shape of the costal patch in the forewing and the 'V' shape of the orange band in the hind wing are diagnostic for *E. nephelanthopa*. In the male genitalia the cornuti are diagnostic. In the female genitalia the form of the sclerotised section of the ductus bursae, with the lack of any swelling, is similar to *E. albipuncta* but the sharply defined basal boundary is diagnostic.

***Eoophyla montana* sp. n.**

(Figs 9, 19, 26)

Types. Holotype ♂, FIJI: Viti Levu, Monasavu, -17°43'00", 178°01'45", 4.v.06, at light, J.A. Clayton. Allotype ♀, same data as holotype except 15.xii.96. Paratype ♀, same data as allotype; all J. Clayton.

Description. See Fig. 9. Wingspan: male 17-21 mm, female 22-25 mm. Ground colour similar to *E. nephelanthopa* but somewhat brighter. Head, thorax and abdomen whitish grey. Forewings with irregular whitish subbasal fascia; large subtriangular dorsal patch from two-fifths to four-fifths and two-

thirds across wing, confluent with discal mark; costal patch from three-fifths to four-fifths, in the form of a broad 'S' shape and extending three-fifths across wing; subterminal fascia narrow and parallel sided with some brownish shading from tornus two-thirds of way towards costa, then widening and clear white for final third; more or less edged distad with brown. Hind wings with terminal spots similar to *E. nephelanthopa* but smaller; terminal two-thirds of wing whitish, very finely specked with pale brown; whitish medial fascia from costa to two-thirds across wing, curved round at dorsal end leaving a clear 'U' shaped band of orange-buff ground colour; diffuse whitish basal fascia.

Male genitalia are shown in Fig. 19; aedeagus with a very large, striking, heavily sclerotised and structured cornutus, over half the length of the aedeagus. Female genitalia are shown in Fig. 26; ductus bursae with large strongly sclerotised expanded section, occupying most of the exterior half; basal boundary sharply defined, but apical boundary diffuse. Signum a longitudinal row of about 12 small chitinous spots.

Etymology. The name *montana* (Latin, adjective) refers to the fact that this species was taken only in montane forest.

Distribution. Six specimens were taken, all in montane forest in Naitasiri Province. This is the only known *Eoophyla* or *Nymphicula* species in Fiji which appears to be restricted to montane forest.

Diagnosis. *Eoophyla montana* is normally brighter with more clearly defined markings than *E. nephelanthopa*, although in worn specimens this may not be conclusive. The shape of the costal patch in the forewing and the 'U' shape of the orange area on the hind wing are diagnostic for *E. montana*. In the male genitalia the cornutus is diagnostic. In the female genitalia the conformation of the large expanded and sclerotised section of the ductus bursae is diagnostic.

***Eoophyla chrysota* (Meyrick, 1886), comb. n.**

Paraponyx [sic] *chrysota* Meyrick, 1886

(Figs 10, 20)

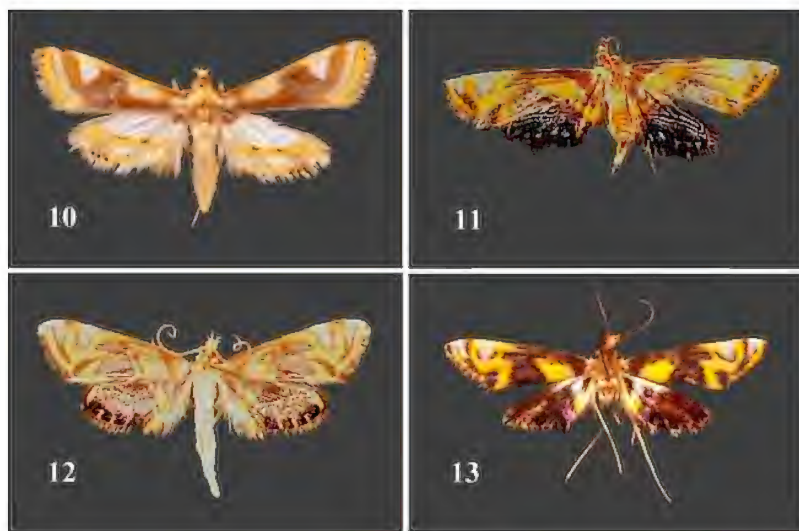
Redescription. See Fig. 10. Wingspan: male 14 mm, female 17-19 mm. Ground colour bright yellowish buff in terminal area of both wings, becoming light brownish buff then darker brown towards base. Markings whitish. Head light brown. Thorax yellowish buff becoming light brown posteriorly. Abdomen pale buff. Forewings with small whitish basal fascia; a diffuse dark brown spot in the discal area, preceded by a diffuse area of whitish colour; costal patch from three-fifths to four-fifths, triangular in shape and extending half way across wing; subterminal fascia whitish ending just short of dorsum, parallel to termen, of approximately equal width throughout and edged distad with a series of well defined brown dashes;

a terminal row of dark brownish dots. Hind wings with only four terminal spots; spots 1 and 2 obsolete and 3 extremely small; spots 4, 5 and 6 small, with 4 and 5 bordered basad by a small white semicircle; a narrow whitish subterminal fascia parallel to termen, partially edged distad with a fine brown line; basal two-thirds of wing clear white, with two dark brown dashes placed centrally on the distal border; very small dark brown basal fascia.

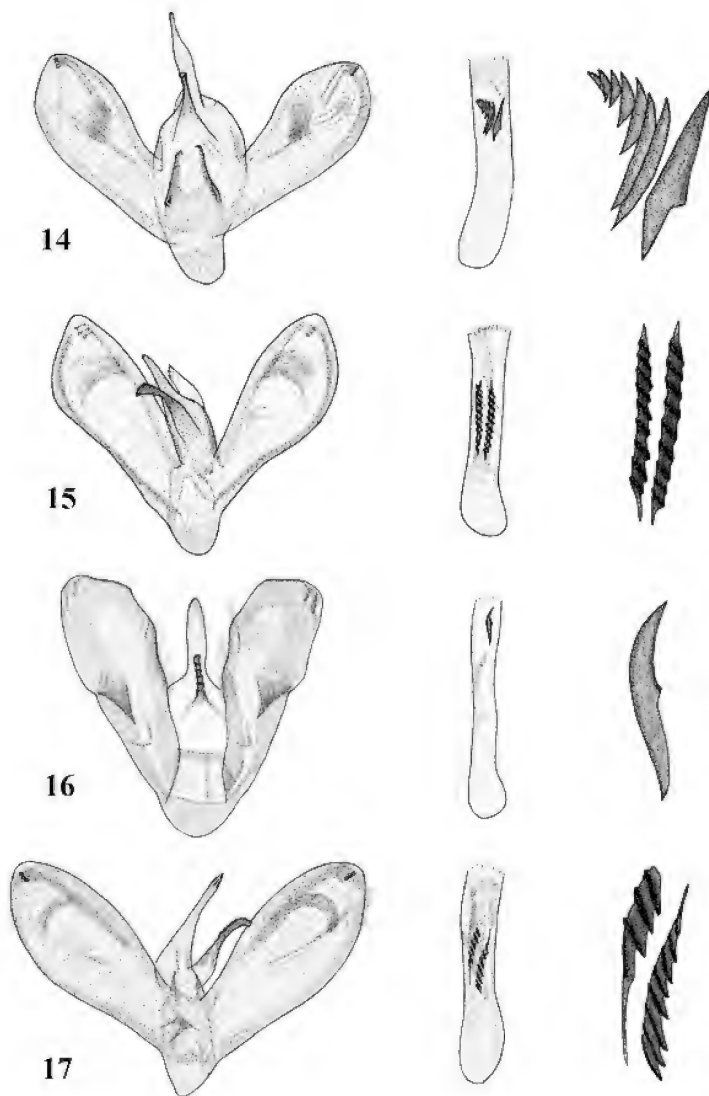
Male genitalia as in Fig. 20; aedeagus narrow, with a single long, narrow cornutus which is only lightly sclerotised. Female genitalia not examined, as the two female specimens available have damaged abdomens.

Distribution. Found to be the scarcest of the *Eoophyla* species in Fiji. Three specimens were taken – in Serua, Cakaudrove and the Suva area.

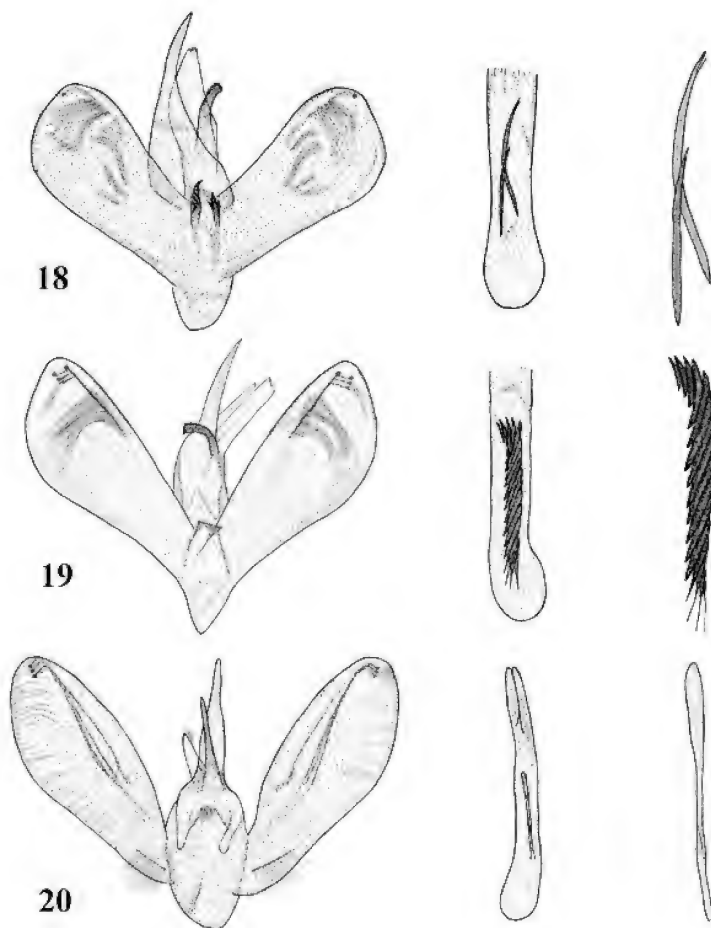
Diagnosis. Type not located. Meyrick's original detailed description (from Fiji) provides a confident identification for this well-marked species, the wing markings making it unmistakable among Fijian *Eoophyla* spp. Specifically the absence of a dorsal patch in the forewing is diagnostic. In the hind wing, the reduced number of spots and the clear white and yellowish buff colouration, with the two central brown dashes, are diagnostic. In the male genitalia the narrow aedeagus with the long, narrow, straight and lightly sclerotised cornutus is also diagnostic.



Figs 10-13. *Eoophyla* and *Nymphicula* spp: (10) *Eoophyla chrysota* (Meyrick) ♀; (11) *Nymphicula australis* (Felder & Rogenhofer) ♂; (12) *Nymphicula cyanolitha* ♀; (13) *Nymphicula* sp. ♂.



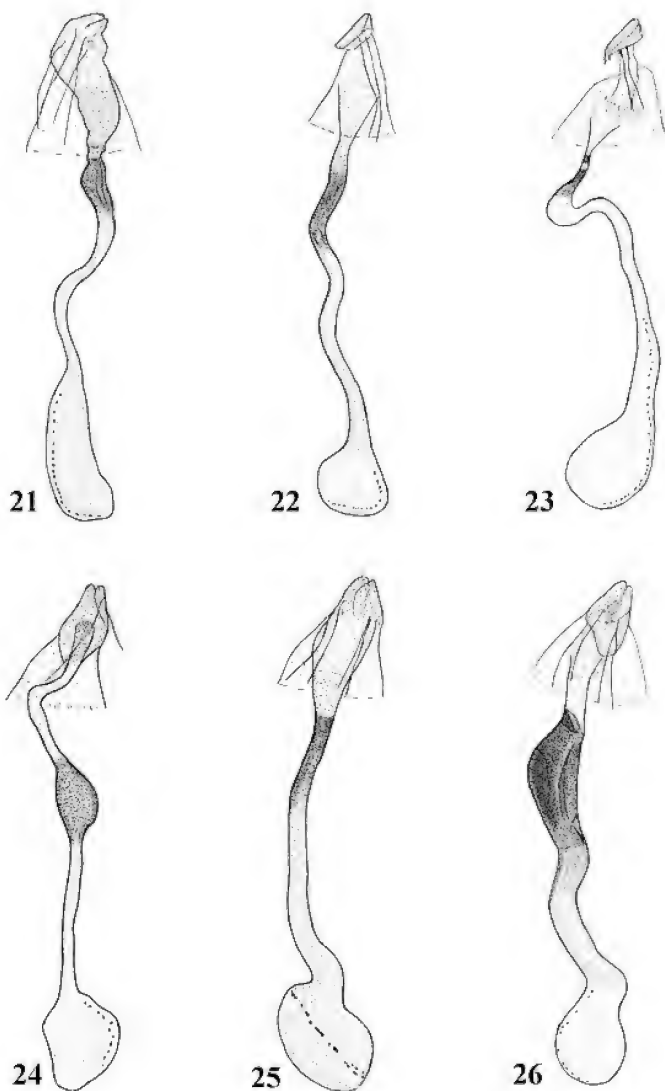
Figs 14-17. Male genitalia; aedeagus; detail of cornuti of *Eoophyla* spp: (14) *E. hexalitha* (Meyrick); (15) *E. albipuncta* sp. n.; (16) *E. vitiensis* sp. n.; (17) *E. lutea* sp. n.



Figs 18-20. Male genitalia; aedeagus; detail of cornuti of *Eoophyla* spp: (18) *E. nephelanthopa* (Meyrick); (19) *E. montana* sp. n.; (20) *E. chrysota* (Meyrick).

Genus *Nymphicula* Snellen, 1882

Speidel (1984) listed the defining characteristics of the genus as the absence of M_1 in the hind wing, tufts between abdominal segments 7 and 8 in the male, a specialised scale tuft on the eighth abdominal sternite in the male and the greatly extended uncus in the male genitalia. Agassiz (2014) confirmed this and stated that the definition had only to be slightly extended.



Figs 21-26. Female genitalia of *Eoophyla* spp: (21) *E. hexalitha* (Meyrick); (22) *E. albipuncta* sp. n.; (23) *E. vitiensis* sp. n.; (24) *E. lutea* sp. n.; (25) *E. nephelanthopa* (Meyrick); (26) *E. montana* sp. n.

Nymphicula australis* (Felder & Rogenhofer, 1874)Margarosticha australis* Felder & Rogenhofer, 1874

(Fig. 11)

Description and diagnosis. See Fig. 11. Fully discussed and illustrated by Agassiz (1984).

Distribution. Four specimens were taken – in Tailevu, Namosi and the Suva area.

Nymphicula cyanolitha* (Meyrick, 1886)Anydraula cyanolitha* Meyrick, 1886

(Fig. 12)

Description and diagnosis. See Fig. 12. Fully discussed and illustrated by Agassiz (1984).

Distribution. Six specimens were taken – in Namosi, Tailevu, Serua and the Suva area.

***Nymphicula* sp.**

(Fig. 13)

Generic placement. A single male (Fig. 13) was taken. As the specimen is missing the abdomen, it cannot be fully described and named here. It is provisionally placed in *Nymphicula* based on the absence of M_1 in the hind wing and its similarity in wing shape and markings.

Description. See Fig. 13. For consistency, the terminology considered most suitable for the description of the *Eoophyla* species is used here also. For ease of comparison, the terminology used by Agassiz (1984) is included in brackets where this may be helpful. Wingspan male 10 mm. Ground colour bright yellow. Body pale brown. Forewings with costal streak dark brown in basal half continuing to four-fifths as pale yellow and widening somewhat; basal fascia (base) dark brown; dark brown dorsal patch (medial area) from two-fifths to four-fifths, extending two-thirds across wing; space between patch and costal streak filled continuously with dark brown; tornal spot large and dark brown; costal patch (first strigula) from three-fifths to four-fifths, from costal streak to half way across wing, with rounded apex; clear white edged dark brown; subterminal fascia (second strigula) clear white, from two-thirds across wing widening to costa and edged dark brown basad and partially distad; cilia pale with brown base.

Hind wings with six marginal black spots; white pupils scarcely visible and surrounded with dark shading causing the spots to coalesce; terminal three-fifths of wing shaded rich dark brown, confluent with shading around marginal spots; clear white costal streak to one half; clear white subbasal fascia and small brown basal fascia.

Distribution. The single specimen was taken in Namosi.

Diagnosis. The striking combination of clear white and rich dark brown markings with the bright yellow ground colour serves to distinguish this species from other Fijian *Nymphicula* species. Specifically in the forewings the short and broad costal patch (first strigula) is diagnostic, as is the overall dark appearance of the terminal three-fifths of the hind wing.

Acknowledgements

I am indebted to Dr David Agassiz of the Natural History Museum, London for helpful discussions and facilitating access to the Museum's collections. I would also like to thank Dr Keith Bland of the National Museums of Scotland for helpful discussions and advice and for arranging access to the entomological collections and other facilities at the Museum and Dr Albert Orr for helpful comments on the manuscript. Also to staff of the School of Biological, Chemical & Environmental Sciences, the University of the South Pacific, Suva, Fiji, for providing access to facilities at the University.

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